

GLOBAL CHALLENGES IN RECREATIONAL FISHERIES

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Blackwell
Publishing

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Blackwell Publishing editorial offices:

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First published 2008 by Blackwell Publishing Ltd

ISBN: 978-1-4051-5657-8

Library of Congress Cataloging-in-Publication Data

Global challenges in recreational fisheries / edited by Øystein Aas.

p. cm.

Includes bibliographical references and index.

ISBN: 978-1-4051-5657-8 (alk. paper)

1. Fishery management. 2. Fishing. I. Aas, Øystein.

SH328.G56 2008

333.95'69-dc22

A catalogue record for this title is available from the British Library

Set in 11/13 pt Times

by Newgen Imaging Systems Pvt. Ltd, Chennai, India

Printed and bound in Singapore

by Markono Print Media Pte Ltd

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11.5 The challenge of ethical angling: the case of C&R and its relation to fish welfare

Robert Arlinghaus

Catch-and-release, particularly total C&R, attracts ethical controversy (de Leeuw 1996; Balon 2000; Aas *et al.* 2002; Policansky 2002; Arlinghaus *et al.* 2007a) as a practice that unavoidably tests the boundaries between culture and nature, human and non-human, agriculture-dominated urban lifestyles and small-scale rural subsistence lifestyles, essential human needs and recreation, and between compassion and exploitation. At least in central Europe, and probably also elsewhere, anglers should expect an increasing resistance against their pastime, mainly because the whole attitude about human's interaction with animals is changing slowly but steadily (Manfredo *et al.* 2003). What is changing in the first place is moral intuitions, and anglers should not be naïve and try to by-pass them (Kunzmann 2004). They challenge us to wonder how humans might forge a better sense of community with animals (fish) and the natural environment in an increasingly industrialized and commercialized world (King 2005).

There are three major ethical challenges to C&R. The first comes from the animal liberation and animal rights movement and concerns harming individual sentient beings (Box 11.1). Animal liberation philosophers such as Singer (1990) argue that pain and suffering are moral facts that can not be ignored. If a human practice inflicts pain and suffering on an animal, then the burden of proving that the practice is justifiable must be borne by those who perform it. Regan (1983) argues that practices such as fishing and hunting violate the animals' inherent value, by treating them as a resource rather than as living, conscious beings. Animal rights and animal liberation philosophers do not believe that pleasure felt by humans is sufficient justification for the pain inflicted on animals or the tanking of an animal's life (Arlinghaus *et al.* 2007a). Consequently, any form of C&R would be incompatible with this perspective (Arlinghaus *et al.* 2007a). Resolving this issue lies outside the research domain as the conflict is associated with radically contrasting world views and value systems held by C&R supporters and those that dislike any form of interaction with animals including fish.

The second challenge is more holistic: the moral problem with recreational fishing *per se* is not harm done directly to the individual animal in the C&R practice, but rather the potential harm done either to the exploited species or to the broader biotic community. Here, is the health of the species, or of the ecosystem, the morally relevant criterion for evaluating angling practices (Rolston 1991)? Thus, recreational angling might be problematic because it interferes with natural processes if exploitation rates and associated mortality levels are high (Cooke and Cowx 2006; Lewin *et al.* 2006). In this situation, C&R offers a viable option to conserve natural processes and the integrity of exploited species

Box 11.1 Summary of animal welfare, animal liberation and animal rights philosophies, and their implications for the acceptance of human use of fish.

- Broadly speaking, *animal welfare* is the notion that humans have a moral duty to care for animals and to look critically at how they are used and treated (Dawkins 2006). However, the obligations that animal welfare entails do not originate in a right of the animal (Table 11.2). This is because animals cannot participate either in the human moral or legal culture since they cannot claim rights or fulfil obligations. Animal welfare philosophies generally allow the interaction with and the use of fish (Table 11.2), provided that this does not comprise the health of fish and fish get what they want if held in captivity (Dawkins 2006).
- *Animal liberation*, a second concept dealing with the acceptance of human interactions with fish, was developed by Singer (1990). Animals enter the moral theatre because of a common evolutionary ancestry and because they are believed to be capable of suffering; that is, pathocentrism-centred perspectives such as the one put forward by Huntingford *et al.* (2006) and other authors (e.g. Braithwaite and Huntingford 2004; Sneddon 2006) are the key to understand animal liberation – suffering qualifies animals for equal consideration. According to Singer (1990), there is no doubt that fish can suffer. This has critical consequences for fish and fisheries (Table 11.1). On the strength of *Animal Liberation* (Singer 1990), it is clear that, for example, every fishing practice is out of the question, particularly recreational fishing and voluntary C&R.
- The name associated with the *animal rights* concept is Regan and his book *The Case for Animal Rights* (Regan 1983). Regan draws a distinction between moral agents and moral patients. Moral agents require a degree of self-consciousness and rationality so that they can understand the concepts involved in moral reasoning. Moral patients such as animals and babies cannot perform moral acts themselves and are on ‘the receiving end of the right and wrong acts of moral agents’ (Regan 1983). Moral agents and moral patients are, however, united in that ‘the principal moral right possessed by all moral agents and patients is the right to respectful treatment’ (Regan 1983). The source of this moral right is the postulate of inherent value (Regan 1983). As regards inherent value, all animals (human and non-human) are equal. In practical terms, this means morally compulsory veganism and the end of all animal use everywhere regardless of consequence. This hails the end of any fishing (Table 11.2; see also Regan [1983], pp. 330–398).

Table 11.2 Implications of animal welfare, animal liberation and animal rights concepts for the socially accepted interaction of humans with fish.

	Animal welfare	Animal liberation	Animal rights
Fish have intrinsic value	No/yes	No	Yes
Fish have rights	No	No	Yes
Duties to fish	Yes	Yes	Yes
Catch, kill and eat	Yes	No	No
Regulatory C&R	Yes	No	No
Voluntary C&R	Yes	No	No
Recreational fishing	Yes	No	No
Fishery management	Yes	No	No
Use of animals (food, work, manufacture, pleasure, science)	Yes	No	No

Source: Modified from Arlinghaus *et al.* (2007a).

while conserving the opportunities for satisfactory recreational experiences, provided that lethal and sub-lethal impacts associated with any release event are minimized or avoided.

A final challenge addresses C&R as a symptom of a dominating attitude towards nature. The angler might be conditioned to perceive animals as objects of his or her passion only in relation to his or her desires, rather than as independently existing living beings. However, life on earth implies predation, death and killing, and the need to fish is embedded in human genes through the evolution of our species (King 2005). One must be willing to engage in predatory activities to have a truly natural existence as a participant of nature. Anything else can be regarded as alienation from nature and a refusal to see nature as it really is (King 2005). In this context, C&R fishing was seen by Evans (2005) as a visible demonstration of the angler's respect for nature. Recreational fishing, including C&R, could thus be seen as a ritualized hunt that leads to experiences that catch-and-kill does not generate (Evans 2005). Evans (2005) goes further by stating:

catch and release fishing can be a part of a practice that does give shape to our lives and to our relationship to the natural world ... The practice of catch and release fishing is most properly based on respect for the integrity of ecosystems and populations that are subjected to the pressures of human use and exploitation. Embedded in this practice is a specific respect for the individual fish one attempts to catch and then release. This respect is embodied in the constraints the intent to release the fish puts on the methods and tackle used.

These different and contrasting forms of ethical argument related to C&R fishing underscore the difficulty of any reflection on recreational fishing. Our judgements will ultimately depend on our understanding of exactly how C&R should

be perceived within society. It can be perceived as playing with food for no good reason (de Leeuw 1996; Lyman 2002; Wolfe 2006) or as sign of a conservation-minded attitude that facilitates sustainable management of recreational fisheries (Aas *et al.* 2002; Policansky 2002). Questions to be resolved include: Is it a matter of what we do to individual fish or of how angling affects entire assemblages or populations? Should C&R be evaluated separately or should it be seen within a larger context of moral perceptions of all human–animal interactions happening on earth (e.g. intensive animal husbandry, keeping pets in zoos etc.)? Arlinghaus *et al.* (2007a) point out that C&R is an integral part of recreational angling as a whole, including from an ethical point of view. But clearly insights are to be gained by considering C&R as a distinct mode for some purposes, just as we do for other aspects of recreational angling.

The contrasting images of C&R fishing are difficult to avoid and harder still to reconcile. Is C&R a modern management option that fisheries managers need to retain? A sign of a post-modern development of a conservation-minded angler constituency? A necessary practice to conserve immature fish under regulatory catch-and-kill? Is C&R a new form of predator–prey relations, or a distortion of them? Or does C&R simply mean torturing of fish without any good reason? Questions such as these are central to the ethics of C&R. Discussing them would help us understand better what is at stake when it comes to practical policy decisions concerning C&R and when options of fisheries management are debated. Irrespective of this, it is common sense that any C&R fishery should be conducted in a manner that minimizes potential negative influences on the individual fish. A concept that is crucial to understand and address in this respect is animal welfare, which is why this is discussed here.

Fish welfare and C&R

Animal welfare, and therefore fish welfare, is as difficult to define as human welfare (Dawkins 1998). Welfare with respect to humans usually means that a person is in good health and that emotions are generally positive or, simply, that he or she is fit and feeling good (Dawkins 2006). Animal welfare science consequently starts with the physical health of the animal, hence the reason why this scientific discipline has its roots in veterinary medicine (Dawkins 2006). However, welfare also implies that animals have positive emotions such as pleasure and contentment or negative ones such as fear, pain and frustration, which humans might label as suffering (Dawkins 2006). Anthropomorphism of human feelings and cognitive and emotional capabilities to fish is considered unhelpful when evaluating fish welfare, *inter alia*, because of physiological differences between human and non-humans and the associated difficulty to prove pain perception and suffering with certainty (Rose 2003; Chandroo *et al.* 2004; Marmeli and Bortolotti 2006). By focusing on pain and suffering in the discussion of fish welfare issues (compare

Huntingford *et al.* 2006), uninformed stakeholders, some politicians and the public at large might mix up animal welfare concepts with pathocentric animal liberation and animal rights philosophies. However, animal welfare, animal liberation and animal rights concepts must be clearly distinguished because each of these originates in a different philosophical domain (Box 11.1); each has different implications for everyday life, the context of our relationships with animals, and for commercial and recreational fishing (Table 11.2). For example, in contrast to animal liberation and animal rights philosophies (Arlinghaus *et al.* 2007b), animal welfare neither questions the interaction of humans with fish *per se* in general nor C&R in particular. To work for increased welfare of caught and released fish, it is crucial to keep three types of crucial questions – the symptoms of good and poor welfare, the conscious experience of suffering and the ethical attitudes towards animals – in separate compartments when assessing animal welfare (Dawkins 1998). By focusing on objectively measurable variables such as distress or health impairments, progress towards resolving fish welfare issues would be enhanced and misunderstanding, particularly in wider public, could be mediated.

It is already recognized that extensionism (e.g. animal liberation and animal rights), that is, the extension of the moral domain to non-human animals, has already succeeded in changing laws and attitudes and has substantially altered the ways that stakeholders are allowed to interact with fish in some jurisdictions. In Germany and Switzerland, for example, the states have constitutional duties with regard to animals and a recent draft of the European constitution has a clause in it that the rights of animals must be taken into account by member states of the European Union in all their activities. In Germany, one has to have a 'reasonable reason' to inflict pain, suffering and damage to an individual animal; typically only fishing for food is acceptable as a good reason for fishing overall (Arlinghaus 2007) and the fish's ability for pain perception and suffering is, as advocated by Sneddon (2006), often taken for granted unless other evidence is provided. This has had critical consequences for recreational fishing in general, because, for example, C&R fishing of legally unprotected fish (e.g. larger than the minimum size limit) risks public prosecution and a sentence of up to 3 years of jail, according to Clause 17 of the German Animal Protection Act, due to cruelty to animals (Arlinghaus 2007). Many stakeholders may not see a good reason in a recreational activity that involves interaction with animals, particularly if labelled 'sport', which is often the case when speaking about extreme forms of C&R, that is, total voluntary C&R or tournament fishing involving C&R. [Arlinghaus *et al.* (2007a) describe how the term 'sport' fishing derives from the word to 'disport' or recreate, and not sport as commonly understood in modern usage.] Similarly, in a review on the assessment of the welfare issues associated with aquatic animals, Håstein *et al.* (2005) stated that, on moral grounds, fishing for subsistence might be acceptable, while recreational fishing ('angling') may not be. However, this would mean that practices such as recreational fishing are only acceptable in a full subsistence-like way, and C&R fishing has no place in

this regard. With heavy angling pressure, this might lead to massive overfishing through complete catch-and-kill, which in turn would not only affect a single fish but entire populations and ecosystems (Cooke and Cowx 2006; Lewin *et al.* 2006).

Sustainability demands that society find ways to better manage and conserve natural populations, while providing social benefits to society, without questioning the use of fish populations *per se* (Arlinghaus *et al.* 2007a). C&R fishing, be it voluntary, mandatory, or both, is a good way to achieve both, but the arguments put forward by Huntingford *et al.* (2006) and already established in German law prohibit this sustainable management practice. Thereby, it is clear that fish welfare issues influence fisheries management and stock conservation, and thus can substantially alter the outlook of fisheries management in general (Arlinghaus *et al.* 2007b; Table 11.2).

Some steps towards ethical C&R angling

Catch-and-release science supports the contention that fish that are angled and handled properly and efficiently, and released in good condition, are likely to recover rapidly, survive and be recaptured (Arlinghaus *et al.* 2007a). However, large variation among species occurs, and there are a multitude of factors that influence the outcome of a particular C&R event (Muoneke and Childress 1994; Policansky 2002; Bartholomew and Bohnsack 2005). Recognizing that there is immense variation among species, fisheries and environments, there are, however, some general principles that can be applied that are standard practice in many recreational fisheries worldwide. Cooke and Suski (2005), for example, developed a list of generalized guidelines that should be relevant to enhancing the welfare status of fish through reductions in injury, stress and mortality without questioning angling *per se* or a component of it, C&R angling (compare de Leeuw 1996; Håstein *et al.* 2005). The list includes, but is not exclusive to, (1) minimizing the duration of the angling event; (2) minimizing or eliminating handling and air exposure; (3) restricting angling at extreme water temperatures; (4) using terminal tackle that reduces injury, stress or mortality (e.g. lures or flies versus organic/live bait, barbless hooks versus barbed hooks, circle hooks versus J-hooks; see contributions by Lukacovic and Uphoff and Schratwieser in this chapter); and (5) avoiding angling during the reproductive period. There are many more ways that anglers can improve welfare of individual fish, and large-scale educational and extension programmes are in place to promote fish welfare practices among anglers. This is very different from simply asserting that recreational angling or C&R compromises the welfare of fish (compare de Leeuw 1996; Huntingford *et al.* 2006). In fact, the message that needs to be disseminated to anglers is that adopting strategies that reduce injury and stress, and hence increase the chance that the fish will survive to reproduce or be caught in the future, are the same strategies that one would adopt to enhance the welfare status of angled fish. Such a message provides anglers with concrete actions to enhance welfare, rather than

Table 11.3 Summary of general ways to improve the welfare status of caught and released fish.

Recommendation	Comment
In some species and situations use barbless hooks, circle hooks instead of J-style hooks, short fixed leaders and avoid organic bait in fishing for predators	Promotes shallow-hooking, reduces injury and reduced unhooking times and air exposure
Cut line if deeply hooked	Some studies show that survival is increased by avoiding injurious events to unhook deeply hooked fish
Keep fish under water while unhooking	Avoiding air exposure is beneficial for most species
Use wet hands, avoid contact with sensitive areas (eye, gills) and minimize contact with mucus	Injury rates and the potential for infection reduced
Play fish minimally	The amount of physiological disturbance is reduced
Use knotless net or rubber nets, for some species use devices such as boga grip or hands	Reduces amount of mucus abrasion
Do not release fish in areas with high predator burden	Post release predation by other species might be relevant for some species (e.g. predation of bonefish by sharks)
Do not keep the fish in keep nets if intention is to release	Although holding fish in keep nets or other devices is not necessarily stressful, it is less problematic to immediately release a fish
Raise fish slowly from depth	Also, one strategy would be to avoid fishing in depth entirely. Sometimes techniques such as venting or depth devices can reduce mortality
Avoid angling at high water temperatures	Many studies have found that for temperate fishes, elevated temperature are more harmful
Avoid angling during the reproductive period	Stress during the C&R event can impair reproduction
If many sub-legal fish are caught on a particular location, move to a different angling site	Cumulative mortality will increase with the number of fish caught
Keep deadly injured fish when legal	It makes little sense to release a fish that is deadly injured. If a fish should be harvested, anesthetize it and kill it immediately by disrupting the blood circulation

Notes: These guidelines have emerged from earlier syntheses published by Cooke and Sneddon (2007), Cooke and Suski (2005) and Arlinghaus *et al.* (2007a). References supporting the contents of the table can be found in the cited work.

simply attacking their activity and further polarizing the animal welfare–fish welfare debate. A summary of concrete recommendations is in Table 11.3. The reader can follow the details behind this recommendations in major syntheses recently published on the topic of C&R (Bartholomew and Bohnsack 2005; Cooke and Suski 2005; Cooke and Sneddon 2007; Arlinghaus *et al.* 2007a).

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